

In the Claims

Please cancel claims 6, 7-9, 19-21, and 32-35.

Please amend the claims as follows:

1. (Amended) A device comprising:

a substrate comprising voltage switchable dielectric material which renders the substrate conductive when a voltage is applied to the substrate above a threshold voltage value and renders the substrate resistive when voltage is applied to the substrate below the threshold voltage value; and

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a current carrying formation formed on a first surface of the substrate, the current carrying formation being in electrical communication with the substrate when a voltage is applied to the substrate above the threshold voltage value;

wherein the substrate includes one or more vias extending from the first surface of the substrate through the substrate to a second, opposing side of the substrate, a surface of the substrate defining the vias comprising current carrying material in electrical communication with the current carrying formation on the first surface of the substrate such that the current carrying formation on the first surface is electrically contactable via the current carrying material within the vias from the second opposing surface of the substrate.

5. (Amended) A device comprising:

a substrate comprising voltage switchable dielectric material which renders the substrate conductive when a voltage is applied to the substrate above a threshold voltage value and renders the substrate resistive when voltage is applied to the substrate below the threshold voltage value; and

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a current carrying formation formed on a first surface of the substrate, the current carrying formation being in electrical communication with the substrate when a voltage is applied to the substrate above the threshold voltage value;

wherein the current carrying formation is electrochemically bonded to the surface of the substrate.

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49. (Amended) A semiconductor device including a substrate upon which circuitry forming the functionality of the semiconductor device is positioned, wherein the improvement comprises:

a substrate comprising voltage switchable dielectric material which renders the substrate conductive and in electrical communication with the circuitry when a voltage is applied to the substrate above a threshold voltage value and renders the substrate resistive when voltage is applied to the substrate below the threshold voltage value; and

a current carrying formation that is electrochemically bonded to the surface of the substrate.

57. (Amended) A semiconductor device comprising:

a substrate comprising voltage switchable dielectric material which renders the substrate conductive when a voltage is applied to the substrate above a threshold voltage value and renders the substrate resistive when voltage is applied to the substrate below the threshold voltage value; and

circuitry formed on a first surface of the substrate, the current carrying formation being in electrical communication with the circuitry when a voltage is applied to the substrate above the threshold voltage value;

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wherein at least a portion of the circuitry is formed on the surface of the substrate by electrochemically bonding conductive material to the surface of the substrate.

58. (Amended) A semiconductor device comprising:

a substrate comprising voltage switchable dielectric material which renders the substrate conductive when a voltage is applied to the substrate above a threshold voltage value and renders the substrate resistive when voltage is applied to the substrate below the threshold voltage value; and

circuitry formed on a first surface of the substrate, the current carrying formation being in electrical communication with the circuitry when a voltage is applied to the substrate above the threshold voltage value;

wherein the substrate includes one or more vias extending from the first surface of the substrate through the substrate to a second, opposing side of the substrate, a surface of the substrate defining the vias comprising current carrying material in electrical communication with the circuitry on the first surface of the substrate such that the circuitry is electrically

contactable via the current carrying material within the vias from the second opposing surface of the substrate.

59. (Amended) A semiconductor device comprising:

a substrate comprising voltage switchable dielectric material which renders the substrate conductive when a voltage is applied to the substrate above a threshold voltage value and renders the substrate resistive when voltage is applied to the substrate below the threshold voltage value; and

circuitry formed on a first surface of the substrate, the current carrying formation being in electrical communication with the circuitry when a voltage is applied to the substrate above the threshold voltage value;

wherein the substrate includes one or more vias extending from the first surface of the substrate through the substrate to a second, opposing side of the substrate, a surface of the substrate defining the vias comprising current carrying material in electrical communication with the circuitry on the first surface of the substrate, and the second, opposing side of the substrate comprising circuitry such that the circuitry on the first and second sides are in electrical communication with each other via the current carrying material within the vias.

REMARKS

This Amendment is in response to the Office Action mailed October 19, 2001. Reconsideration is requested in view of the above amendments and the following remarks.

1. Objection To The Drawings

The Examiner objects to the drawings on the grounds that the non-conductive layer on the first surface of the substrate specified in claims 8 and 9 are not shown in the figures. This ground of rejection is rendered moot by the cancellation of these claims.

The Examiner also objects to the drawings on the grounds that reference numbers 730, 830, 930, 735, 835, 935 used to describe Figure 7 are not shown in the figure. Proper amendment of Figure 7 is provided along with a redlined version of Figure 7 showing the changes that were made.